IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appln. No:	10/645,913
Applicant:	Michael M. Grunstein et al.
Filed:	August 21, 2003
Title:	COMPOSITION AND METHODS FOR TREATMENT OF ASTHMA
TC/A.U.:	1644
Examiner:	Michael Edward Szperka
Confirmation No.:	9590
Docket No.:	RCHP-106US1

RESPONSE TO RESTRICTION REQUIREMENT

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

S I R :

This is in response to the Restriction Requirement stated in the Office Letter dated April 17, 2006.

The Examiner is requiring an election between:

(1) Group I, claims 1, 2, 3-26, 38-43, drawn to methods of treating asthma in humans by administering proteins, polypeptides or antibodies that inhibit the binding of IgE to FcεRII, classified in class 424, subclass 143.1.

(2) Group II, claims 1, 2, 7-15, 20-26, and 38-43, drawn to methods of treating asthma in humans by administering synthetic peptides that inhibit the binding of IgE to FcεRII, classified in class 514, subclass 2.

(3) Group III, claims 1, 2, 7-15, 20-26, and 38-43, drawn to methods of treating asthma in humans by administering non-peptides that inhibit the binding of IgE to FcεRII, classified in class 514, subclass 1.

(4) Group IV, claims 27 and 28, drawn to screening methods that identify agents that inhibit the binding of IgE to FcεRII, classified in class 435, subclass 7.1.

(5) Group V, claim 29, drawn to an agent identified by a screening assay, classified in class 530, subclass 350.

(6) Group VI, claim 30, drawn to a method of inhibiting binding of IgE to a cell by contacting a cell with a protein, polypeptide or antibody, classified in class 435, subclass 7.2.

(7) Group VII, claim 30, drawn to a method of inhibiting binding of IgE to a cell by contacting a cell with a synthetic peptide, classified in class 435, subclass 7.8.

(8) Group VIII, claim 30, drawn to a method of inhibiting binding of IgE to a cell by contacting a cell with a non-peptide, classified in class 435, subclass 4.

(9) Group IX, claim 31, drawn to a method of regulating interleukin 1β in vitro by administering a protein, polypeptide, or antibody that inhibits the binding of IgE to FcεRII, classified in class 530, subclass 387.1.

(10) Group X, claim 31, drawn to a method of regulating interleukin 1β in vitro by administering a synthetic peptide that inhibits the binding of IgE to FcεRII, classified in class 350, subclass 300.

(11) Group XI, claim 31, drawn to a method of regulating interleukin 1β in vitro by administering a non-peptide that inhibits the binding of IgE to FcεRII, classified in class 530, subclass 868.

(12) Group XII, claims 31-37, drawn to methods of regulating interleukin 1β in a human by administering a protein, polypeptide or antibody that inhibits the binding of IgE to FcεRII, classified in class 424, subclass 145.1.

(13) Group XII, claims 31-37, drawn to methods of regulating interleukin 1β in a human by administering a synthetic peptide that inhibits the binding of IgE to FcεRII, classified in class 514, subclass 8.

(14) Group XIV, claims 31-37, drawn to methods of regulating interleukin 1β in a human by administering a non-peptide that inhibits the binding of IgE to FcεRII, classified in class 424, subclass 184.1.

Applicants traverse this requirement for the reasons discussed below.

A. Restrictions

A restriction is proper when the inventions are either independent or distinct *as claimed*, and there would be a serious burden on the examiner if restriction was not required. (MPEP § 803).

1. Group I, claims 1-26 and 38-43, Group II, claims 1, 2, 7-15, 20-26, and 38-43, and Group III, claims 1, 2, 7-15, 20-26, and 38-43 are not distinct from one another and examination of all of these groups would not be a serious burden for the Examiner.

The claims of Groups I, II, and III should be examined together because the claimed methods are all drawn to administering an agent that inhibits the binding of IgE to FcεRII. The inhibitory compound may be a protein, polypeptide, or antibody (Group I, class 424); a synthetic peptide (Group II, class 514); or a non-peptide (Group III, class 514). As stated in the specification at paragraph 0064 in published application No. US2005/0079175, (publication of Appl. No. 10/645,913), this agent includes any ligand that has the effect of inhibiting binding of an IgE molecule to an FcεRII receptor protein on an airway smooth muscle cell. The nature of the ligand beyond its ability to inhibit IgE binding to an FcεRII receptor is not critical. A patentability search for an agent that prevents IgE from binding to the FcεRII receptor will necessarily uncover art that pertains to any such agents, including proteins, polypeptides, antibodies, synthetic peptides, and non-peptides, if such art exists. Therefore, it is unnecessary to conduct a separate patentability search for each type of agent.

In addition, the class definition for Class 514, states that "Class 514 is an integral part of Class 424." Thus, the claims of Groups I, II, and III may all be considered to belong to a single class, Class 424.

Since a single search of the relevant art will disclose any existing art teaching an agent that binds to the FcεRII receptor and prevents IgE from binding to the FcεRII receptor, regardless of whether the agent is a protein, polypeptide, antibody, synthetic peptide, or non-peptide, no undue burden would be placed upon the Examiner to conduct a patentablility search for the claims of Groups I, II, and III simultaneously. Applicants therefore respectfully request withdrawal of the restriction requirement with respect to Groups I, II, and III.

2. Groups VI, VII, and VIII are not distinct from one another; Groups IX, X, and XI are not distinct from one another;. and Groups XII, XIII, and XIV are not distinct from one another for the same reasons given above.

The same reasoning discussed above in (1) also applies to the requested restrictions, based on the nature of the agent, among Groups VI, VII, and VIII (all classified in class 435); among Groups IX, X, and XI (all classified in class 530), and among Groups XII, XIII, and XIV (which may all be classified in class 424 as discussed above). Therefore, Applicants respectfully request withdrawal of the restriction requirements with respect to these groups.

3. Groups IV (claims 27 and 28) and V (claim 29) are not distinct because the inhibitory agent of claim 29 arises from the process of claims 27 and 28.

Paragraph 3 of the Office Action states that Groups IV and V are distinct because "agents capable of inhibiting binding of IgE to FcεRII can be made by methods other than those recited in the claims, such as injecting an animal with soluble CD23 and harvesting the resulting antibodies."

Applicants respectfully point out MPEP § 806.05(f) states that a process and product may be shown to be distinct inventions if, "the product *as claimed* can be made by another and materially different process," (emphasis in the original). The agent of claim 29 is identified, *i.e.*, "made" from the process of claims 27 and 28 which requires that the agent be identified by whether it can inhibit binding of IgE to cells which express the FcεRII receptor. Even if antibodies can be made by another process, their activity in preventing binding of IgE to cells, and thus their use as "an agent useful for inhibiting binding of IgE to an FcεRII receptor protein" as required by claim 29, could only be identified by the process of claim 27 or 28. Therefore, the product *as claimed* cannot be made from another, materially different process, and the process and the product are accordingly not distinct.

Applicants respectfully request withdrawal of the restriction requirements with respect to these groups.

4. Groups IV (claims 27, 28), V (claim 29), VI (claim 30), VII (claim 30), and VIII (claim 30) are not distinct because claims 27-30 are all directed to an agent which inhibits binding of IgE to an FcεRII receptor on a cell.

Related inventions are distinct if the inventions as claimed are not connected in at least one of design, operation, or effect and if at least one invention is patentable over the other. (MPEP § 802.01).

Claims 27-30 all recite an agent which prevents binding of IgE to an FcεRII receptor on a cell. Thus Groups IV-VI are connected in effect, (preventing binding of IgE to an FcεRII receptor on a cell), and the inventions, *as claimed*, are not distinct. The method of claims 27 and 28, which determines the extent of inhibition of IgE binding to cells, is used to identify the agent of claim 29 that inhibits IgE binding. The identified agent of claim 29 is then used in the method of claim 30 to inhibit IgE binding to an FcεRII receptor on a cell.

Paragraph 4 of the Office Action states that groups V and VI are distinct because the agent of claim 29 can be used in a materially different way than the method of claim 30, *i.e.*, to purify FcεRII receptors, or as a positive control in methods that identify agents that block IgE binding. In claims 27-30 IgE binding is inhibited by the agent. If the agent was used as a positive control in assays, it would be used to show that it is possible for the agent to inhibit binding of IgE to the cells being tested. For example, a blocking antibody specific for FcεRII receptors prevents IgE from binding these receptors as shown in Figure 1, and described in paragraph 0158 of the published application. Applicants respectfully disagree with the assertion that this use is materially different from inhibiting IgE binding in the claimed process of claims 27 and 28. Similarly, if the agent is used to isolate FcεRII receptors, it is essential that the receptors bind to the agent. When FcεRII receptors are bound to the agent, IgE is inhibited from binding to the receptors as required by claims 27-30. Applicants respectfully disagree with the assertion that this use is materially different from inhibiting IgE binding in the process of claims 27, 28 and 30. Therefore, these alternative uses for the agent are not materially different from the claimed processes and Groups IV and V are not distinct from Groups VI, VII, and VIII.

Accordingly, applicants respectfully request withdrawal of the restriction requirements with respect to these groups.

5. Groups I-III and Groups XII-XIV (claims 31-37) are not distinct because claims 1-26, 31-37, and 38-43, which may all be classified in class 424, are directed to treating a patient with an agent that inhibits binding of IgE to an FcεRII receptor.

The argument is made in paragraph 5 of the Office Action that Groups I-IV and VI-XIV are different methods reciting different process steps, different agents, and different functions. It is concluded that art that anticipates or renders obvious one group would not necessarily anticipate or render obvious the others.

As discussed above the "different agents" are sufficiently similar that they can be covered in a single patentability search. Furthermore, these same types of agents are required by the claims of Groups I-IV and Groups VI-XIV. Therefore, the same art with respect to these agents would anticipate or render obvious the claims of both Groups I-IV and Groups VI-XIV.

Applicants further point out that the claims of Groups I-III and Groups XII-XIV may also be classified within one group (424) and that all of these claims are directed to administering an agent which inhibits binding of IgE to an FcεRII receptor protein to a human subject. While the patient populations may differ between Groups I-III and XII-XIV, both sets of claims require giving to a human patient an agent which inhibits binding of IgE to an FcεRII receptor protein. Both sets of claims also recite administration of the agent to a human patient via aerosol, inhalation, or nebulizer, and delivery of the agent to the nasal tract, upper respiratory tract, or the lower trachea. Therefore, art which anticipates or renders obvious the claims within Groups XII-XIV, would also anticipate or render obvious the claims within Groups I-III.

Thus, Applicants respectfully request withdrawal of the restriction requirements with respect to these groups.

In order for this response to be deemed complete, the applicants provisionally elect to prosecute **Group I, claims 1-26, and 38-43**, drawn to methods of treating asthma in humans by administering proteins, polypeptides or antibodies that inhibit

the binding of IgE to FcεRII. However, in view of the fact that, for the reasons given above, Groups I-III are not properly restricted, Applicants suggest that these three groups should be combined for purposes of prosecution.

B. Elections

Applicants were asked to elect from Group I a single disclosed species with respect to route of administration for purposes of prosecution. Applicants traverse this requirement for species election for the following reasons.

In paragraph 7 of the Office Action it is noted that the various routes of administration of an agent that inhibits binding of IgE to FcεRII that are recited in the claims of Groups 1-3 are distinct because the route of administration can influence the effectiveness of therapeutic method and that all claimed therapeutic agents may not be amenable to administration via all delivery methodologies.

The Applicants point out that the route of administration is only one factor that influences the efficacy of the agent. The specification discusses factors at paragraph 0103 of the published application as follows: "It will be appreciated that the precise formulation and dosage amounts will vary depending upon any number of factors, including, but not limited to, the type and severity of the disease to be treated, the route of administration, the age and overall health of the individual, the nature of the ligand, etc. However, the preparation of a pharmaceutically acceptable composition having an appropriate pH, isotonicity, stability, and other characteristics is within the skill of the art." At paragraph 0105 of the published application, dosage ranges for agents which have the form of a protein, peptide, and nucleotide are provided. Factors affecting the frequency of administration are discussed in paragraph 0107 of the published application. Appropriate pharmaceutical formulations are discussed in paragraph 0108 of the published application.

The claims of Group I are generic for any treatment providing a therapeutically effective amount of the agent, regardless of the route of administration. In light of the specification, those of skill in the art would know how to select the best route of administration for a particular agent, and how to optimize the amount of agent to a particular route of administration, to provide an amount sufficient to inhibit IgE binding to an FcεRII receptor protein, as required by independent claims 1 and 14 and the claims which depend from them.

Therefore, Applicants respectfully request withdrawal of the species election with respect to Group I.

In order for this response to be deemed complete, the applicants provisionally elect, with traverse, parenteral (intravenous and intramuscular) administration as the species for prosecution.

Respectfully submitted,

Christopher A. Rothe, Reg. No. 54,650
Joy Mulholland, Reg. No. 47,810
Attorneys for Applicants

JM/lrb

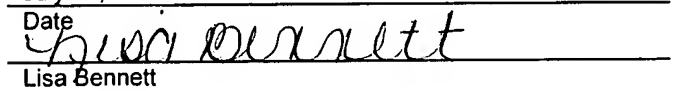
Dated: July 14, 2006

P.O. Box 980
Valley Forge, PA 19482-0980
(610) 407-0700

The Commissioner for Patents is hereby authorized to charge payment to Deposit Account No. **18-0350** of any fees associated with this communication.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, with sufficient postage, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on:

July 14, 2006
Date



Lisa Bennett

LRB_C:\NRPORTBL\RP\LISA\42409_1.DOC